* Input Design :

- It involve capturing data as well as inputing it in computer.

- Once output requirenment have been finalize. nextstep is to find out what data need to be availeble to the system to produce output design.

- Accordingly input design consist of data capture and data validation.

→ Data Capture :

- The process of getting data through the computer in machine sensible format and its source.

- The basic step in data capture process are as follow.
  1) Original recording (વાંકડા ઉભા
  2) Data Transmission) સ્ટકડાયામાં લઈ જાય
  3) Data Preparation) વાંકડા પીઅસ કરે
  4) Verification) ચેક કરે
  5) Sorting) પ્રમાણ બાનેક ગેસવ
  6) Control) ગોસ્વાક નાબો ને ક-સ્ટાવ કરે
  7) computer input customer ને આપ

1) Original Recording:

- It is collection of data at its source.
- It involve clerical preparation of source document including manual check.

- for eg. preparing examination mark list, filling out job application form.

2) Data Transmission:

- Data move from original point to data processing center.

- eg. group of related mark list are bunched into group & send to data processing center.

3) Data Preparation:

- The Transcription of source document on to input media such as punch card, megnatic disk, megnatic dram, etc.

- eg. In offline system, Transfer of data from mark list to magnatic disk.

4) Verification:

- It is to verify that transcription have been done correctly.

- It is dangerous because it can result in wrong output.

5) Sorting:

- It is a process of arranging a data in some desired sequence either manually or automatically.

- System punch card have to be arrange in a logical order for production of particular input and output.

6) Control:

- Throughout all the stages perform above, It is essential that cheking, verifing, Validity controls are maintain.

- It is to ensure that all the data are collected, transmeted or input curorectly.

7) Computer input:

- The data is read by input device like megnatic disk and tranfer to internal storage, where it to under go validity check.

- Invalid data will be back to entry stage again.

→ # Data Validation:

✳ Objective of data validation:

- Objective of data validation is to detect error at earlier stages before costly activities are performed on invalid data.

- Some data validation is done by manually in data capture itself.

- Inspite of this still there may be incorrect data, missing data, duplicate data, etc.

- Therefor it is necessary that before inputing data to the computer for processing, different check are carried out first.

- This check will Classified valid and invalid data.

- Data validation check are divided into 2 category.
  1) Field check
  2) Transaction check

1) Field check:

- It includes:
  - A) limit check
  - B) Picture check
  - c) valid code check
  - d) check digit
  - e) arithmatic check
  - f) cross check

A) limit check:

- It may be applied to each field of record to ensure that its contents lie with in predefine size.

- eg. Amount of basic salary can be from 5000 to 10000.

B) Picture check:

- It may be applied to each field of record to detect entry of incorrect character in the field.

- eg. Picture of employee no. is AAA99. CF5M3 is invalid

C) Valideode check:

- It may be applied to each field of record to check valid input against predefine transection code which may either be embeded or stored.

- eg. division of 54class contain only data from A, B, or C. any other letter is invalid

D) check digit:

- It is use to detect transposition or transcription error.

- eg. 486 is entered as 489

E) Arithmatic check:

It is use to ensure that validity of result by performing arithmatic operation in different way.

eg   To calculate attendence, total no. of processes, total no. of lecture, total no. of students.

P) Cross check:

It may be applied to verify the field appearing in different file to verify that resultfully.

2)   Transection Check:

− It   include   following −
   A) sequential
   B) format completness
   C) redundand data check
   D) Combination check
   E) Probability check
   F) password check
   G) batch total
   H) Hash total

A) sequential :
− It may be applied to detect any missing transection
   eg serially checking of emp. no.

DATE / /

B) **format Completeness :**
- It is use to check presence and position of all the field in transection.
- eg. transection number, A/c no, transection type must be fullfill.

C) **Redundand data check :**
- It is use to check validity code with reference to discription.

D) **Combination check :**
- It may be applied on different field of fill for. eg. To check amount **written** in figure and words in **cheque.**

E) **Probability check :**
- It is use to avoid unnecessary rejection of data.

F) **Password check :**
- It is use to exersize for checking entry of data by authorized person.

G) **Batch total :**
- It can be use to ensure that transection have been transmitted transcripted correctly.
- eg. using rollno of student as a batch to batch total, all students rollno should be summerized

H) Hash total:

- A control total i.e. sum of value in particular field or record area of a file to ensure that transaction have been transmitted correctly but it is meaningless total.

- eg. Add contact no for a no. of customer

* Objective of Data Capture:

- There are 5 objective to guide designing of Input data focuses on,
    1) Controlling amount of Input
    2) Avoiding delay.
    3) Avoiding error in data.
    4) Avoiding extra steps.
    5) Keeping process ~~sepented~~ Simple

1) Controlling Amount of Input:

- Effective design should control ~~to~~ quantity of Input data because,
    i) data preparation & Entry operation depends on people
    ii) Reducing Input requirement, System Analyst can speed entire process from data capture to processing result. to the user.

2) Avoiding delay :

- A processing delay resulting from data preparation & entry operations is called "Bottleneck" problem.

- One way of minimising this problem is using way to avoid processing delay

3) Avoiding error in data :

- It deals with error in 1 sense.

- The rate at which error occure depends on quantity of data.

- Since smaller amount of data to input, less opportuhity for errors.

4) Avoiding extra steps :

- Sometimes volume of transections & amount of data preparation & entry operations resulting from them can not be controlled.

5) Keeping Process Simple :

- Best advice to system Analyst is to achieve all the objectives mentioned above in simpliest manner.